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<110> Dedhar, Shoukat  
Hannigan, Greg

<120> Integrin-Linked Kinase and its Uses

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<141> 2001-04-23

<150> 60/009,074

<151> 1995-12-21

<150> 08/752,345

<151> 1996-11-19

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Met Asp Asp Ile Phe Thr	
1 5	
cag tgc cgg gag ggc aac gca gtc gcc gtt cgc ctg tgg ctg gac aac	222
Gln Cys Arg Glu Gly Asn Ala Val Ala Val Arg Leu Trp Leu Asp Asn	

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Thr Glu Asn Asp Leu Asn Gln Gly Asp Asp His Gly Phe Ser Pro Leu			
25	30	35	
cac tgg gcc tgc cga gag ggc cgc tct gct gtg gtt gag atg ttg atc			318
His Trp Ala Cys Arg Glu Gly Arg Ser Ala Val Val Glu Met Leu Ile			
40	45	50	
atg cgg ggg gca cgg atc aat gta atg aac cgt ggg gat gac acc ccc			366
Met Arg Gly Ala Arg Ile Asn Val Met Asn Arg Gly Asp Asp Thr Pro			
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ctg cat ctg gca gcc agt cat gga cac cgt gat att gta cag aag cta			414
Leu His Leu Ala Ala Ser His Gly His Arg Asp Ile Val Gln Lys Leu			
75	80	85	
ttg cag tac aag gca gac atc aat gca gtg aat gaa cac ggg aat gtg			462
Leu Gln Tyr Lys Ala Asp Ile Asn Ala Val Asn Glu His Gly Asn Val			
90	95	100	
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Pro Leu His Tyr Ala Cys Phe Trp Gly Gln Asp Gln Val Ala Glu Asp			
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Arg Ala Glu Lys Met Gly Gln Asn Leu Asn Arg Ile Pro Tyr Lys Asp			
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aca ttc tgg aag ggg acc acc cgc act cgg ccc cga aat gga acc ctg			702
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aat gac att gtc gtg aag gtg ctg aag gtt cga gac tgg agt aca agg			846
Asn Asp Ile Val Val Lys Val Leu Lys Val Arg Asp Trp Ser Thr Arg			
215	220	225	230

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Lys Ser Arg Asp Phe Asn Glu Glu Cys Pro Arg Leu Arg Ile Phe Ser	
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cat cca aat gtg ctc cca gtg cta ggt gcc tgc cag tct cca cct gct	942
His Pro Asn Val Leu Pro Val Leu Gly Ala Cys Gln Ser Pro Pro Ala	
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Pro His Pro Thr Leu Ile Thr His Trp Met Pro Tyr Gly Ser Leu Tyr	
265 270 275	
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Asn Val Leu His Glu Gly Thr Asn Phe Val Val Asp Gln Ser Gln Ala	
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Val Lys Phe Ala Leu Asp Met Ala Arg Gly Met Ala Phe Leu His Thr	
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Ser Phe Gln Cys Pro Gly Arg Met Tyr Ala Pro Ala Trp Val Ala Pro	
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Glu Ala Leu Gln Lys Lys Pro Glu Asp Thr Asn Arg Arg Ser Ala Asp	
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Met Trp Ser Phe Ala Val Leu Leu Trp Glu Leu Val Thr Arg Glu Val	
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ccc ttt gct gac ctc tcc aat atg gag att gga atg aag gtg gca ttg	1374
Pro Phe Ala Asp Leu Ser Asn Met Glu Ile Gly Met Lys Val Ala Leu	
395 400 405	
gaa ggc ctt cgg cct acc atc cca cca ggt att tcc cct cat gtg tgt	1422
Glu Gly Leu Arg Pro Thr Ile Pro Pro Gly Ile Ser Pro His Val Cys	
410 415 420	
aag ctc atg aag atc tgc atg aat gaa gac cct gca aag cga ccc aaa	1470
Lys Leu Met Lys Ile Cys Met Asn Glu Asp Pro Ala Lys Arg Pro Lys	
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Phe Asp Met Ile Val Pro Ile Leu Glu Lys Met Gln Asp Lys	

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445

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His Gly Phe Ser Pro Leu His Trp Ala Cys Arg Glu Gly Arg Ser Ala
      35           40           45
Val Val Glu Met Leu Ile Met Arg Gly Ala Arg Ile Asn Val Met Asn
      50           55           60
Arg Gly Asp Asp Thr Pro Leu His Leu Ala Ala Ser His Gly His Arg
65           70           75           80
Asp Ile Val Gln Lys Leu Leu Gln Tyr Lys Ala Asp Ile Asn Ala Val
      85           90           95
Asn Glu His Gly Asn Val Pro Leu His Tyr Ala Cys Phe Trp Gly Gln
      100          105          110
Asp Gln Val Ala Glu Asp Leu Val Ala Asn Gly Ala Leu Val Ser Ile
      115          120          125
Cys Asn Lys Tyr Gly Glu Met Pro Val Asp Lys Ala Lys Ala Pro Leu
      130          135          140
Arg Glu Leu Leu Arg Glu Arg Ala Glu Lys Met Gly Gln Asn Leu Asn
145          150          155          160
Arg Ile Pro Tyr Lys Asp Thr Phe Trp Lys Gly Thr Thr Arg Thr Arg
      165          170          175
Pro Arg Asn Gly Thr Leu Asn Lys His Ser Gly Ile Asp Phe Lys Gln
      180          185          190
Leu Asn Phe Leu Thr Lys Leu Asn Glu Asn His Ser Gly Glu Leu Trp
      195          200          205
Lys Gly Arg Trp Gln Gly Asn Asp Ile Val Val Lys Val Leu Lys Val
      210          215          220
Arg Asp Trp Ser Thr Arg Lys Ser Arg Asp Phe Asn Glu Glu Cys Pro
225          230          235          240
Arg Leu Arg Ile Phe Ser His Pro Asn Val Leu Pro Val Leu Gly Ala
      245          250          255
Cys Gln Ser Pro Pro Ala Pro His Pro Thr Leu Ile Thr His Trp Met
      260          265          270
Pro Tyr Gly Ser Leu Tyr Asn Val Leu His Glu Gly Thr Asn Phe Val
      275          280          285
Val Asp Gln Ser Gln Ala Val Lys Phe Ala Leu Asp Met Ala Arg Gly
      290          295          300
Met Ala Phe Leu His Thr Leu Glu Pro Leu Ile Pro Arg His Ala Leu
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			340					345					350		
Pro	Ala	Trp	Val	Ala	Pro	Glu	Ala	Leu	Gln	Lys	Lys	Pro	Glu	Asp	Thr
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Leu	Val	Thr	Arg	Glu	Val	Pro	Phe	Ala	Asp	Leu	Ser	Asn	Met	Glu	Ile
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Gly	Met	Lys	Val	Ala	Leu	Glu	Gly	Leu	Arg	Pro	Thr	Ile	Pro	Pro	Gly
			405						410					415	
Ile	Ser	Pro	His	Val	Cys	Lys	Leu	Met	Lys	Ile	Cys	Met	Asn	Glu	Asp
			420					425					430		
Pro	Ala	Lys	Arg	Pro	Lys	Phe	Asp	Met	Ile	Val	Pro	Ile	Leu	Glu	Lys
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			20					25					30		
His	Gly	Phe	Ser	Pro	Leu	His	Trp	Ala	Cys	Arg	Glu	Gly	Arg	Ser	Ala
		35					40					45			
Val	Val	Glu	Met	Leu	Ile	Met	Arg	Gly	Ala	Arg	Ile	Asn	Val	Met	Asn
	50					55					60				
Arg	Gly	Asp	Asp	Thr	Pro	Leu	His	Leu	Ala	Ala	Ser	His	Gly	His	Arg
65					70					75					80
Asp	Ile	Val	Gln	Lys	Leu	Leu	Gln	Tyr	Lys	Ala	Asp	Ile	Asn	Ala	Val
				85					90					95	
Asn	Glu	His	Gly	Asn	Val	Pro	Leu	His	Tyr	Ala	Cys	Phe	Trp	Gly	Gln
			100					105					110		
Asp	Gln	Val	Ala	Glu	Asp	Leu	Val	Ala	Asn	Gly	Ala	Leu	Val	Ser	Ile
		115					120					125			
Cys	Asn	Lys	Tyr	Gly	Glu	Met	Pro	Val	Asp	Lys	Ala	Lys	Ala	Pro	Leu
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Arg	Glu	Leu	Leu	Arg	Glu	Arg	Ala	Glu	Lys	Met	Gly	Gln	Asn	Leu	Asn
145					150					155					160
Arg	Ile	Pro	Tyr	Lys	Asp	Thr	Phe	Trp	Lys	Gly	Thr	Thr	Arg	Thr	Arg
				165					170					175	
Pro	Arg	Asn	Gly	Thr	Leu	Asn	Lys	His	Ser	Gly	Ile	Asp	Phe	Lys	Gln
			180					185					190		

Leu Asn Phe Leu Thr Lys Leu Asn Glu Asn His Ser Gly Glu Leu Trp  
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 Lys Gly Arg Trp Gln Gly Asn Asp Ile Val Val Lys Val Leu Lys Val  
 210 215 220  
 Arg Asp Trp Ser Thr Arg Lys Ser Arg Asp Phe Asn Glu Glu Cys Pro  
 225 230 235 240  
 Arg Leu Arg Ile Phe Ser His Pro Asn Val Leu Pro Val Leu Gly Ala  
 245 250 255  
 Cys Gln Ser Pro Pro Ala Pro His Pro Thr Leu Ile Thr His Trp Met  
 260 265 270  
 Pro Tyr Gly Ser Leu Tyr Asn Val Leu His Glu Gly Thr Asn Phe Val  
 275 280 285  
 Val Asp Gln Ser Gln Ala Val Lys Phe Ala Leu Asp Met Ala Arg Gly  
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 Pro Ala Trp Val Ala Pro Glu Ala Leu Gln Lys Lys Pro Glu Asp Thr  
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 370 375 380  
 Leu Val Thr Arg Glu Val Pro Phe Ala Asp Leu Ser Asn Met Glu Ile  
 385 390 395 400  
 Gly Met Lys Val Ala Leu Glu Gly Leu Arg Pro Thr Ile Pro Pro Gly  
 405 410 415  
 Ile Ser Pro His Val Cys Lys Leu Met Lys Ile Cys Met Asn Glu Asp  
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 Ile Lys Thr Leu Lys Pro Gly Thr Met Met Pro Glu Ala Phe Leu Gln  
 35 40 45  
 Glu Ala Gln Ile Met Lys Lys Leu Arg His Asp Lys Leu Val Pro Leu  
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Tyr	Ala	Val	Val	Ser	Glu	Glu	Pro	Ile	Tyr	Ile	Val	Thr	Glu	Phe	Met
65					70					75					80
Thr	Lys	Gly	Ser	Leu	Leu	Asp	Phe	Leu	Lys	Glu	Gly	Glu	Gly	Lys	Phe
			85						90					95	
Leu	Lys	Leu	Pro	Gln	Leu	Val	Asp	Met	Ala	Ala	Gln	Ile	Ala	Asp	Gly
			100					105					110		
Met	Ala	Tyr	Ile	Glu	Arg	Met	Asn	Tyr	Ile	His	Arg	Asp	Leu	Arg	Ala
		115					120					125			
Ala	Asn	Ile	Leu	Val	Gly	Asp	Asn	Leu	Val	Cys	Lys	Ile	Ala	Asp	Phe
	130					135					140				
Gly	Leu	Ala	Arg	Leu	Ile	Glu	Asp	Asn	Glu	Tyr	Thr	Ala	Arg	Gln	Gly
145					150					155					160
Ala	Lys	Phe	Pro	Ile	Lys	Trp	Thr	Ala	Pro	Glu	Ala	Ala	Leu	Tyr	Gly
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Arg	Phe	Thr	Ile	Lys	Ser	Asp	Val	Trp	Ser	Phe	Gly	Ile	Leu	Leu	Thr
			180					185					190		
Glu	Leu	Val	Thr	Lys	Gly	Arg	Val	Pro	Tyr	Pro	Gly	Met	Val	Asn	Arg
		195					200					205			
Glu	Val	Leu	Glu	Gln	Val	Glu	Arg	Gly	Tyr	Arg	Met	Pro	Cys	Pro	Gln
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Gly	Cys	Pro	Glu	Ser	Leu	His	Glu	Leu	Met	Lys	Leu	Cys	Trp	Lys	Lys
225					230					235					240
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			20					25					30		
Lys	Ile	Leu	Met	Glu	Gln	Asp	Phe	His	Ala	Glu	Arg	Val	Asn	Glu	Phe
		35					40					45			
Leu	Arg	Glu	Val	Ala	Ile	Met	Lys	Arg	Leu	Arg	His	Pro	Asn	Ile	Val
	50					55					60				
Leu	Phe	Met	Gly	Ala	Val	Thr	Gln	Pro	Pro	Asn	Leu	Ser	Ile	Val	Thr
65					70					75					80
Glu	Tyr	Leu	Ser	Arg	Gly	Ser	Leu	Tyr	Arg	Leu	Leu	His	Lys	Ser	Gly
			85						90				95		
Ala	Arg	Glu	Gln	Leu	Asp	Glu	Arg	Arg	Arg	Leu	Ser	Met	Ala	Tyr	Asp
			100					105					110		
Val	Ala	Lys	Gly	Met	Asn	Tyr	Leu	His	Asn	Arg	Asn	Pro	Pro	Ile	Val
		115					120					125			
His	Arg	Asp	Leu	Lys	Ser	Pro	Asn	Leu	Leu	Val	Asp	Lys	Lys	Tyr	Thr
		130					135					140			

Val	Lys	Val	Cys	Asp	Phe	Gly	Leu	Ser	Arg	Leu	Lys	Ala	Ser	Thr	Phe
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Leu	Ser	Ser	Lys	Ser	Ala	Ala	Gly	Thr	Pro	Glu	Trp	Met	Ala	Pro	Glu
			165						170						175
Val	Leu	Arg	Asp	Glu	Pro	Ser	Asn	Glu	Lys	Ser	Asp	Val	Tyr	Ser	Phe
			180					185					190		
Gly	Val	Ile	Leu	Trp	Glu	Leu	Ala	Thr	Leu	Gln	Gln	Pro	Trp	Gly	Asn
	195						200					205			
Leu	Asn	Pro	Ala	Gln	Val	Val	Ala	Ala	Val	Gly	Phe	Lys	Cys	Lys	Arg
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Leu	Glu	Ile	Pro	Arg	Asn	Leu	Asn	Pro	Gln	Val	Ala	Ala	Ile	Ile	Glu
225					230					235					240
Gly	Cys	Trp	Thr	Asn	Glu	Pro	Trp	Lys	Arg	Pro	Ser	Phe	Ala	Thr	Ile
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			20					25					30		
Met	Leu	Asn	Val	Thr	Ala	Pro	Thr	Pro	Gln	Gln	Leu	Gln	Ala	Phe	Lys
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Asn	Glu	Val	Gly	Val	Leu	Arg	Lys	Thr	Arg	His	Val	Asn	Ile	Leu	Leu
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Phe	Met	Gly	Tyr	Ser	Thr	Lys	Pro	Gln	Leu	Ala	Ile	Val	Thr	Gln	Trp
65					70				75						80
Cys	Glu	Gly	Ser	Ser	Leu	Tyr	His	His	Leu	His	Ile	Ile	Glu	Thr	Lys
			85					90						95	
Phe	Glu	Met	Ile	Lys	Leu	Ile	Asp	Ile	Ala	Arg	Gln	Thr	Ala	Gln	Gly
			100					105					110		
Met	Asp	Tyr	Leu	His	Ala	Lys	Ser	Ile	Ile	His	Arg	Asp	Leu	Lys	Ser
		115					120					125			
Asn	Asn	Ile	Phe	Leu	His	Glu	Asp	Leu	Thr	Val	Lys	Ile	Gly	Asp	Phe
	130					135					140				
Gly	Leu	Ala	Thr	Val	Lys	Ser	Arg	Trp	Ser	Gly	Ser	His	Gln	Phe	Glu
145					150					155					160
Gln	Leu	Ser	Gly	Ser	Ile	Leu	Trp	Met	Ala	Pro	Glu	Val	Ile	Arg	Met
			165						170					175	
Gln	Asp	Lys	Asn	Pro	Tyr	Ser	Phe	Gln	Ser	Asp	Val	Tyr	Ala	Phe	Gly
		180					185					190			
Ile	Val	Leu	Tyr	Glu	Leu	Met	Thr	Gly	Gln	Leu	Pro	Tyr	Ser	Asn	Ile
	195						200					205			



Asn	Asn	Arg	Asp	Gln	Ile	Ile	Phe	Met	Val	Gly	Arg	Gly	Tyr	Leu	Ser
210						215				220					
Pro	Asp	Leu	Ser	Lys	Val	Arg	Ser	Asn	Cys	Pro	Lys	Ala	Met	Lys	Arg
225					230				235					240	
Leu	Met	Ala	Glu	Cys	Leu	Lys	Lys	Lys	Arg	Asp	Glu	Arg	Pro	Leu	Phe
			245					250					255		
Pro	Gln	Ile	Leu	Ala	Ser	Ile	Glu	Leu	Leu	Ala	Arg	Ser	Leu	Pro	
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